IN THE SPECIFICATION

Please amend the paragraphs of the specification as follows:

On page 2, please replace paragraph [1004] with the following amended paragraph:

Given the growing demand for wireless data applications, the need for very efficient wireless data communication systems has become increasingly significant. The IS-95 standard is capable of transmitting traffic data and voice data over the forward and reverse links. A method for transmitting traffic data in code channel frames of fixed size is described in detail in U.S. Patent No. 5,504,773, entitled "METHOD AND APPARATUS FOR THE FORMATTING OF DATA FOR TRANSMISSION," assigned to the assignee of the present invention and incorporated by reference herein. Further, a high data rate (HDR) system that provides for high rate packet data transmission in a CDMA system is described in detail in the "TIA/EIA/IS-856 – cdma2000 High Rate Packet Data Air Interface Specification" (hereinafter referred to as the HDR standard), as well as in co-pending U.S. Patent Application Serial No. 08/963,386, entitled "METHOD AND APPARATUS FOR HIGH RATE PACKET DATA TRANSMISSION[[",]] ", filed November 3, 1997, now U.S. Patent No. 6,574,211, issued June 3, 2003, and assigned to the assignee of the present invention and incorporated by reference herein.

On page 5, before paragraph [1020], please delete the sub-heading "Overview."

On page 5, please replace paragraph [1020] with the following amended paragraph:

The present invention relates generally to adjusting the number of taps in an adaptive equalizer based on the rate of change of the communications channel as indicated by the Doppler frequency. FIG. 1A depicts an example communications environment 100A within which the present invention can operate. Example communications environment 100A includes a transmitter 102 in communication with a receiver 104 via a wireless channel 110. Transmitter 102 can represent any device capable of transmitting information over wireless channel 110. Similarly, receiver 104 can represent any device capable of receiving information over wireless channel 110. Receiver 104 includes an adaptive equalizer 108 for suppressing the effects of

noise and interference introduced by wireless channel 110. Wireless channel 110 can represent any wireless link over which information can flow according to a defined communication protocol. Communications over wireless channel 110 can, for example, conform to the IS-95 CDMA standard, the cdma2000 standard, and/or the HDR standard.

On page 8, please replace paragraph [1026] with the following amended paragraph:

FIG. 2A depicts an example receiver 104A in greater detail according to an example embodiment of the present invention. Receiver 104A includes a pre-processor 202 and adaptive equalizer 108. As will be apparent, receiver 104A can include other components such as an antenna (not shown). As shown in FIG. 2A, a stream of digital data ***y(n)*** is transmitted through wireless channel 110 and is corrupted by additive noise and interference including multipath interference. The corrupted data is received by pre-processor 202 in receiver 104A. Pre-processor 202 can include, for example, a radio receiver, radio-frequency (RF) to baseband converter, lowpass filter, automatic gain control (AGC), and ~~analog to digital~~ analog-to-digital conversion (ADC) (none shown).

On page 10, please replace paragraph [1033] with the following amended paragraph:

Typically, MMSE optimization is implemented by adaptive algorithms (*e.g.*, RLS or LMS) or by correlation estimation and direct matrix inversion. For LMS optimization, the update equation for the ***m***th coefficient on the ***k***th antenna is

$$C_k^m[n+1] = C_k^m[n] + \Delta X_k^m[n](y[n] - \hat{y}[n])^*$$

where Δ is the LMS step size parameter. The step-size parameter for the LMS algorithm controls the tradeoff between adaptation speed and misadjustment error (called excess MSE). If the step size is made too large, the algorithm is not guaranteed to converge. In the normalized LMS algorithm, the step size parameter depends on the energy of the observation vector $\boldsymbol{X}$. When an AGC (which attempts to keep the received power per sample at $\boldsymbol{I_0}$) is employed in the receiver, then the step size can be set based on a normalized step parameter and the expected energy summed over all the taps and antennas

$$\Delta = \frac{\Delta_N}{K * (M_1 + M_2 + 1) * I_0}.$$

On page 14, please replace paragraph [1050] with the following amended paragraph:

If the difference X is greater than A, then in operation 408, it is determined whether the difference X is positive or negative indicating an increase or decrease in Doppler frequency respectively. If the Doppler frequency has decreased, then in operation 410, it is determined whether ***TimerA*** satisfies a threshold ***WaitA***. ***WaitA*** represents the minimum amount of time that is required to elapse since the last time taps were dropped, before taps can be added to adaptive equalizer 108. Similarly, ***TimerD*** and ***WaitD*** in operation 418 are used to ensure that a minimum amount of time has elapsed since the last time taps were added, before allowing taps to be dropped. The operation of these two timers in combination prevents continual adding and subtracting of taps when the Doppler frequency is close to one of the quantization boundaries (given by positive integer multiples of A Hz). If the elapsed time threshold ***WaitA*** has not been satisfied, the equalizer length is not adjusted and the slot index and timers are incremented in operation 406.

On page 15, please replace paragraph [1051] with the following amended paragraph:

If the elapsed time threshold ***WaitA*** has been satisfied, then in operation 412 the number of taps to be added (***B_Add***) is determined. According to an example embodiment of the present invention, ***B_Add*** is determined by consulting a look-up table that associates a number of taps with the bin center of the quantized Doppler frequency. An example look-up table is Table 2, shown below. As can be seen in Table 2, more taps are added (or dropped) at the lower Doppler frequencies. This is because changes at the lower Doppler frequencies are more meaningful than changes at the higher frequencies in terms of the effect of channel variation on the excess MSE.

Doppler frequency (Hz) at center of bin	Number of taps to add (B_Add)	Number of taps to drop ~~(B_Drop)~~ (B_Drop)
BinCenter[m] = 2.5	0	8
BinCenter[m] = 7.5	8	6
BinCenter[m] = 12.5	6	4
BinCenter[m] = 17.5	4	4
BinCenter[m] = 22.5	4	2
BinCenter[m] = 27.5	2	2
BinCenter[m] = 32.5	2	0
BinCenter[m] > 37.5	0	0

Table 2

On page 16, please replace paragraph [1054] with the following amended paragraph:

According to a first example embodiment, taps are added to the side (either causal or ~~anticausal~~ anti-causal) that is considered to be more useful. In general, those taps having a coefficient of higher magnitude are considered more useful because they contribute more to the filter output. The usefulness determination is based on the most recent value of the equalizer coefficients.

On page 18, please replace paragraph [1063] with the following amended paragraph:

In operation 422, it is determined whether taps will be dropped from the causal side, the anti-causal side, or both. As described above with respect to adding taps, taps can be dropped from the side considered to be less useful. According to this example embodiment, a suitable rule for dropping taps would be:

Set B_1=B_Drop and set B_2=0 if $| C_k^{-M1}[n] | < | C_k^{M2}[n] |$
Set B_2=B_Drop and set B_1=0 if $| C_k^{M2}[n] | < | C^{-M1}[n]$[[/]] $\underline{|}$.

where taps are dropped from the side with the coefficient having the lowest magnitude at the outermost tap. Alternatively, according to a second example embodiment a more conservative rule for dropping taps would be:

Set B_1=B_Drop/2 and set B_2=B_Drop/2

where taps are dropped equally from both sides.

On page 20, please replace paragraph [1071] with the following amended paragraph:

As described above, the costs associated with implementing the more ~~simple~~ simpler embodiment depicted in FIG. 5 are less than those associated with the more complex embodiment of FIG. 4. However, the more simple embodiment might not perform as well under certain conditions.